In the Claims

Claim 1 (Currently amended): A method for modulating an immune response, comprising co-administering to a mammal:

an effective amount of a nucleic acid sequence encoding p35 and p40 subunits of human IL-12, and a promoter sequence operably linked to the nucleic acid sequence encoding the p35 and p40 subunits;

an effective amount of a nucleic acid sequence encoding human IFN-γ, and a promoter sequence operably linked to the nucleic acid sequence encoding human IFN-γ; and

an antigen, such that the co-administering results in an increase of IFN-γ and IL-2 production ~~production~~, an increase of IgG2a specific to the antigen, a decrease of IL-4 production, and reduced serum IgE.

Claim 2 (Cancelled)

Claim 3 (Previously presented): The method of claim 1, wherein the co-administering results in expression of the p35 and the p40 subunits, the p35 subunit comprising the amino acid sequence of SEQ ID NO:8, and the p40 subunit comprising the amino acid sequence of SEQ ID NO:10.

Claims 4-5 (Cancelled)

Claim 6 (Previously presented): The method of claim 1, wherein the co-administering results in expression of the human IFN-γ, and wherein the human IFN-γ comprises the amino acid sequence of SEQ ID NO:12.

Claim 7 (Previously presented): The method of claim 1, wherein the nucleic acid sequence encoding the p35 and the p40 subunits of the human IL-12 comprises SEQ ID NO:7 and SEQ ID NO:9.

Claim 8 (Previously presented): The method of claim 1, wherein the nucleic acid sequence encoding the human IFN-γ comprises SEQ ID NO:11.

Claim 9 (Previously presented): The method of claim 1, wherein the nucleic acid sequences are administered with a pharmaceutically acceptable carrier.

Claims 10 - 11 (Cancelled)

Claim 12 (Previously presented): The method of claim 1, wherein the nucleic acid sequences and promoter sequences are administered within a viral vector.

Claims 13-14 (Cancelled)

Claim 15 (Previously presented): The method of claim 1, wherein the antigen is selected from the group consisting of a protein, peptide, glycoprotein, carbohydrate, lipid, glycolipid, hapten conjugate, recombinant nucleotides, killed or attenuated organism, toxin, toxoid, and organic molecule.

Claims 16-17 (Cancelled)

Claim 18 (Previously presented): The method of claim 1, wherein the antigen is administered to the mammal with the nucleic acid sequences and a pharmaceutically acceptable carrier.

Claim 19 (Previously presented): The method of claim 1, wherein the mammal is human.

Claims 20-42 (Cancelled)

Claim 43 (Previously presented): A method for modulating an immune response, comprising co-administering to a mammal:

an effective amount of a plasmid comprising a nucleic acid sequence encoding p35 and p40 subunits of human IL-12, and a promoter sequence operably linked to the nucleic acid sequence encoding the p35 and p40 subunits;

an effective amount of a plasmid comprising a nucleic acid sequence encoding human IFN-γ, and a promoter sequence operably linked to the nucleic acid sequence encoding the human IFN-γ; and

an antigen, such that the co-administering results in an increase of IFN-γ and IL-2 production, an increase of IgG2a specific to the antigen, a decrease of IL-4 production, and reduced serum IgE.

Claim 44 (Cancelled)

Claim 45 (Previously presented): The method of claim 43, wherein the antigen comprises an allergen.

Claim 46 (Previously presented): The method of claim 43, wherein the antigen comprises Kentucky blue grass (KBG) allergen extract.

Claim 47 (Previously presented): The method of claim 43, wherein the operably linked promoter sequences comprise cytomegalovirus (CMV) promoters.

Claim 48 (Previously presented): The method of claim 43, wherein the antigen comprises Kentucky blue grass (KBG) allergen extract, and the operably linked promoter sequences comprise cytomegalovirus (CMV) promoters.

Claim 49 (Previously presented): The method of claim 43, wherein the mammal is human.

Claim 50 (Previously presented): The method of claim 43, wherein the co-administering results in expression of the p35 and the p40 subunits, the p35 subunit comprising the amino acid sequence of SEQ ID NO:8, and the p40 subunit comprising the amino acid sequence of SEQ ID NO:10.

Claim 51 (Cancelled)

Claim 52 (Previously presented): The method of claim 43, wherein the mammal suffers from a condition selected from the group consisting of allergy, allergic rhinitis, atopic dermatitis, asthma, allergic sinusitis, pulmonary fibrosis, and cancer.

Claim 53 (Previously presented): The method of claim 43, wherein the plasmids are administered by a route selected from the group consisting of intramuscularly, orally, and intranasally.

Claims 54 - 57 (Cancelled)

Claim 58 (Previously presented): The method of claim 1, wherein the nucleic acid sequence encoding the p35 and p40 subunits of the human IL-12 and the nucleic acid sequence encoding the human IFN-γ are co-administered to the mammal through a mucosal route.

Claim 59 (Cancelled)

Claim 60 (Previously presented): The method of claim 1, wherein the nucleic acid sequence encoding the p35 and p40 subunits of the human IL-12 and the nucleic acid sequence encoding the human IFN-γ are co-administered to the mammal intranasally.

Claim 61 (Cancelled)

Claim 62 (Previously presented): The method of claim 43, wherein the plasmids are co-administered to the mammal through a mucosal route.

Claim 63 (Cancelled)

Claim 64 (Previously presented): The method of claim 43, wherein the plasmids are co-administered to the mammal intranasally.

Claim 65 (Cancelled)

Claim 66 (Previously presented): The method of claim 1, wherein the mammal suffers from a condition selected from the group consisting of allergy, allergic rhinitis, atopic dermatitis, asthma, allergic sinusitis, pulmonary fibrosis, and cancer.

Claims 67 – 70 (Cancelled)

Claim 71 (Previously presented): The method of claim 43, wherein the nucleic acid sequence encoding the p35 and p40 subunits of human IL-12 comprises SEQ ID NO: 7 and SEQ ID NO: 9.

Claim 72 (Previously presented): The method of claim 43, wherein the nucleic acid sequence encoding human IFN-γ comprises SEQ ID NO: 11.

Claim 73 (Previously presented): The method of claim 1, wherein the nucleic acid sequences are administered by a route selected from the group consisting of intramuscularly, orally, and intranasally.

Claim 74 (Previously presented): The method of claim 1, wherein said co-administering is carried out intramuscularly.

Claim 75 (Previously presented): The method of claim 43, wherein said co-administering is carried out intramuscularly.

Claim 76 (New): The method of claim 1, wherein the nucleic acid sequences are conjugated with chitosan to form nanoparticles.

Claim 77 (New): The method of claim 43, wherein the plasmids are conjugated with chitosan to form nanoparticles.